3.11 PROBLEM: LACK OF AN EFFECTIVE SYSTEM FOR DISSEMINATION OF HEALTH INFORMATION.

Such a system is required to disseminate urgent information during a health emergency and also as a component of the health education programme., Neither mechanism has been fully developed in Kheshki.

RECOMMENDATION:

A responsive network for dissemination of clear accurate health messages should be developed in any camp before any emergency arises. Initially this should be set up by the DA and RVA staff, but will be extended and consolidated with the implementation of the primary health care programme.

3.12 PROBLEM: LACK OF MONITORING OF MOBILE WATER SUPPLY.

There was frequent uncertainty about the availability and frequency of water tankers, which are essential in an emergency situation when other water supplies are inadequate.

RECOMMENDATION.

There needs to be more coordinated monitoring of the operation of water tankers from RVA level as well as from territorial officer/programme officer, UNHCR in order to avoid the kind of problems encountered in Kheshki.

3.13 PROBLEM. SLOW ESTABLISHMENT OF STATIC WATER SUPPLY SYSTEM.

Despite repeated assurances to the contrary, it took several months for the installation of standpipes based on a local tube well.

RECOMMENDATION.

Appropriate technology and reasonably cost effective way of supplying water such as handpumps should be implemented to provide a relatively fast way of solving water supply problems in emergency situation instead of expensive and high technology oriented solutions such as tube wells which require long time for implementation.

3.14 PROBLEM. LACK OF ACCEPTABILITY OF WATER QUALITY BY REFUGEES.

On several occasions refugees reverted to consuming better tasting but contaminated water because the taste of water of assured quality was unacceptable to them.

RECOMMENDATION

In planning water supply, consideration must be given to acceptability by the consumers in addition to chemical and bacteriological quality.

3.15 PROBLEM. INEFFICIENT USE OF WATER TANKERS.

Once assigned to the camp, water tanker drivers were reported to be distributing water directly to refugees and not pouring it into static tanks.

RECOMMENDATION

Drivers of mobile water tankers should be instructed always to fill static tanks, if available, rather than give water out directly to refugees. All water tankers should have the necessary equipment to do this which will lead to less contamination, increased frequency of trips and more water available.

3.16 PROBLEM DELAYED CHLORINATION OF WATER.

This was not recommended or implemented until more than 2 weeks after the reported start of the outbreak.

RECOMMENDATION.

Appropriate chlorination of water sources should be considered and implemented immediately at the start of an outbreak. BHUs should have chlorinated water available and also immediately set up adequate facilities for hand-washing and for hygienic disposal of vomitus and diarrhoea.

3.17 PROBLEM: ROLE OF INTER-AGENCY MONITORING GROUP.

All participants agreed that the interagency monitoring group performed a useful function. However there were problems when recommendations or commitments agreed to at the meetings were not implemented.

RECOMMENDATION

Every member of the group should regard it as their duty to do their utmost to ensure rapid implementations of all recommendations. The monitoring group should be continued as a standing committee which should be convened whenever a new camp is created or an emergency arises. Any member of the group could request it to be convened via UNHCR Health Coordinator or Programme Officer (water).

ANNEX 1

PARAMETERS OF THE OUTBREAK
(during reported period : 17 July - 30 August 1989)

1. ATTACK RATE (cumulative incidence)
= 7430/20,000 x 100 = 37%

2. MORTALITY RATE (17 July - 30 August)
= 18/20,000 x 1000 = 0.9/1000

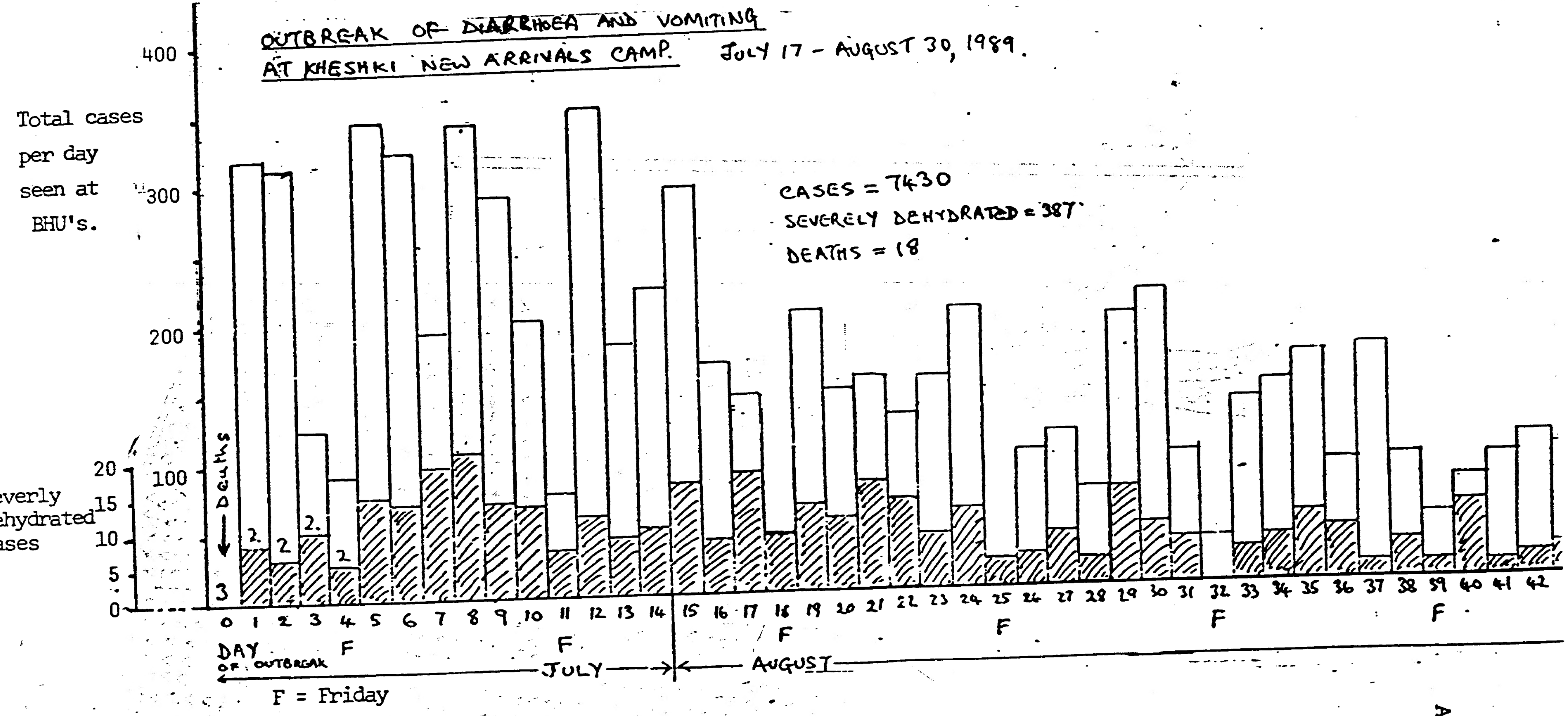
3. VIRULENCE (proportion of cases with severe disease)
= 387/7430 x 100 = 5.2%

4. CASE - FATALITY RATE (all cases)
= 18/7430 x 100 = 0.2%

5. CASE - FATALITY RATE (severe dehydration)
= 18/387 x 100 = 4.7%

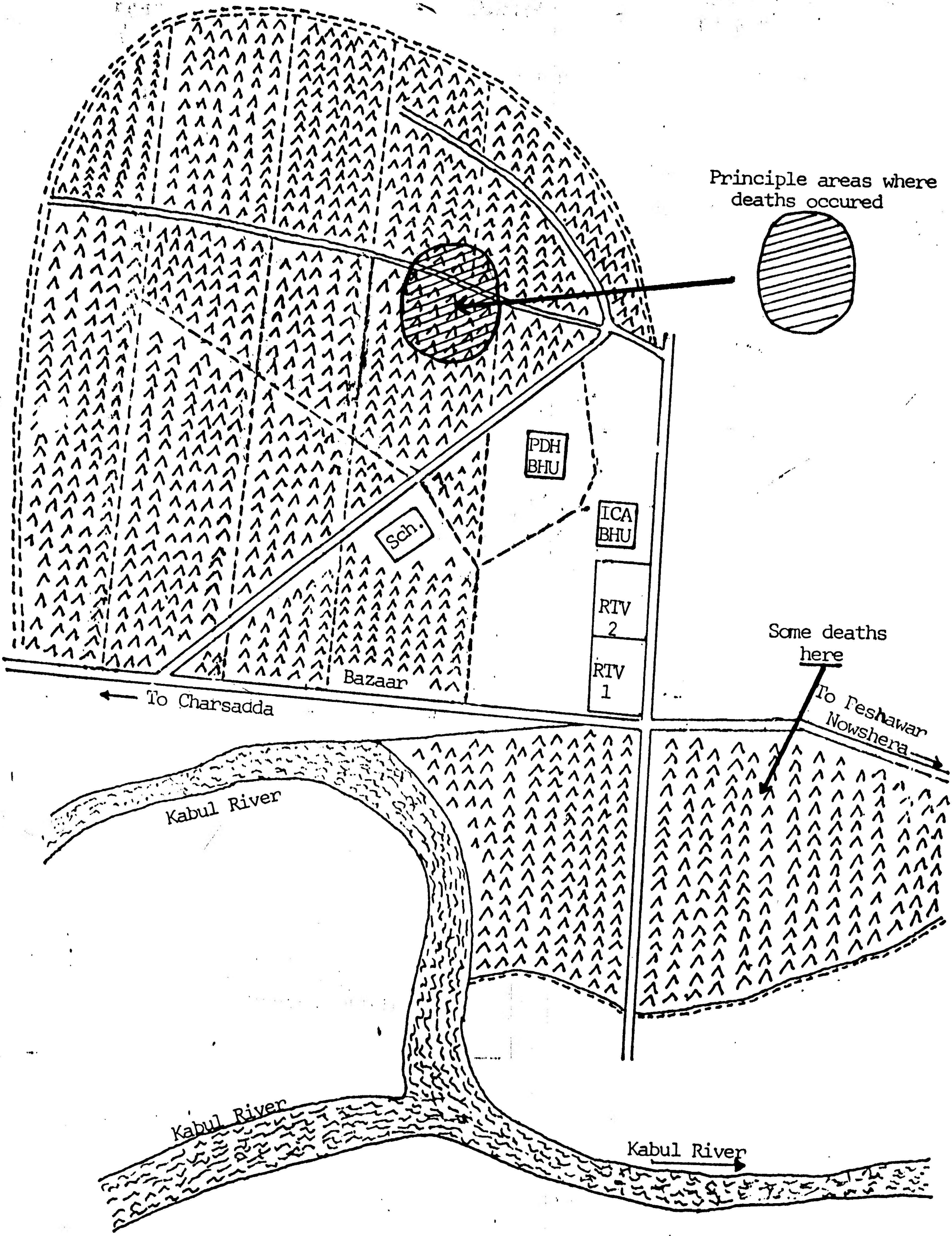
Notes.
1. Data from BHU Records.
2. Parameter 1 may be over estimate and 3, 4 may be under estimate because non severe cases may have attended BHUs more than once.

ANNEX 2



OUTBREAK OF DIARRHOEA AND VOMITING
AT KHESHKI NEW ARRIVALS CAMP. JULY 17 - AUGUST 30, 1989.
CASES = 7430
SEVERELY DEHYDRATED = 387
DEATHS = 18
Total cases per day seen at BHU's.
everly ehydrated ases
400
300
200
100
20
15
10
5
0
Deaths
3
2.
2
2.
2
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42
F
F
F
F
F
F
DAY OF OUTBREAK
JULY
AUGUST
F = Friday

KHESHKI RV (JULY 1989)



DIARRHOEA REPORT

Report on outbreak of Diarrhoea and Vomiting at Kheshki New Arrivals Camp. July, August 1989.

Date of Report: 10th September 1989.

SUMMARY

A severe outbreak of diarrhoea and vomiting occurred in Kheshki new arrivals camp in July and August 1989. 18 deaths occurred mainly amongst children and old people during the reported period of the outbreak. Attack rates and case fatality rates were high and the mortality rate was approximately 0.9 per 1000. A considerable number of problems occurred in the investigation and management of the outbreak; out of these a series of recommendations have been produced which should be helpful in the response to future, similar outbreaks.

1. DESCRIPTION OF CAMP AND OUTBREAK.

Kheshki new arrivals camp was established on 23rd. March 1989 on low-lying army land near the village of Kheshki, off the Nowshera-Mardan road, just north of the Kabul river. The land is of poor quality, mainly sandy clay and subject to flooding. It was previously used as rough pasture only. Most refugees came from Shari, Shinwari, and Mohmand Tribes from Ningarhar and had few possessions. The population increased rapidly from establishment to approximately 20000 by mid-July.

Inter-Church Aid (ICA) initially sent in a mobile medical team and they established a static BHU in May. Afghan Health and Social Assistance Organization (AHSAO) set up a mobile outreach immunization programme for women and children in early April and also commenced distribution of reconstituted dried skimmed milk (DSM). Austrian Relief Committee (ARC) started a VIP latrine construction and basic health education programme in May. A water supply programme consisting of mobile water tankers, static surface tanks, shallow wells with handpumps and finally piped supply with standposts from a local tube well is being implemented progressively by Danish Committee for Aid to Afghan Refugees (DACAAR) Public Health Engineering Department (PHED), and Commissionerate for Afghan Refugees (CAR).

On 17th July UNHCR SOP territorial staff received reports from the RVA and affected refugees of an outbreak of severe diarrhoea and vomiting. 14 deaths (including 6 children <6yrs, 4 adults >50 yrs) were reported to have occurred from 2nd - up

to 17 July, majority with diarrhoea. The outbreak continued from the date of first report for just over 6 weeks. Between 17 July and 30th August there were 18 deaths; 10 of these were children under 6 years of age and 1 an adult over 50 years. All these people who died had severe diarrhoea and dehydration. The mortality rate during the reported period of the outbreak was 0.9/1000. This is very likely an underestimate because of the lack of an adequate mortality reporting system and reluctance of refugees to report deaths themselves (see annex 1 for more epidemiological parameters of the outbreak).

Attendances at medical facilities for Diarrhoea and Vomiting were approx 250/day, with 4% severely dehydrated and given intravenous therapy, between 18-31 July, and 150/day with 7% severely dehydrated between 1-15 August, and 100/day with 5% severely dehydrated between 16-29 August (see annex 2 for epidemic curve). Most cases reported rapid onset of abdominal pain, vomiting and watery diarrhoea, a minority also had blood in stools as well. Cases, including those severely dehydrated, occurred at all ages but most deaths were in young children (<6yrs). The numerous stool specimens sent grew normal flora (e.g. nonpathogenic and non toxigenic coliforms, proteus spp., diphtheroids). 1 specimen grew shigella species and 3 contained Entamoeba histolytica cysts. None grew Vibrio cholerae. No obvious causative organisms were isolated.

No formal outbreak investigation was performed but information gathered from various sources showed that the outbreak appeared to have started in the centre of the camp, north of the road amongst Shari tribe (see map - annex 3). Most deaths occurred here but some cases and deaths also occurred in the more recently settled area, south of the road and adjacent to river. Many patients complained of poor quality of drinking water and admitted using river water (which is probably highly contaminated) for drinking when the tanker supply was unavailable. Some refugees said that river water tasted better. Most people probably stopped drinking river water when the outbreak became publicized (after 18th July). There were several reports of refugees developing symptoms in Kheshki, recovering when they visited another camp, and relapsing on their return. Another possible source of infection was the distribution of liquid milk (reconstituted DSM) which is allowed to be taken home by children (against UNHCR recommendations). There was no specific food history pointing to the cause of the outbreak. Food consumption had been mainly vegetables, some in poor condition. Meat donated by Saudi Arabia from the Haj had not been delivered to this camp. There have also been problems with latrine constructions and use because of the high water table and severe flooding, which occurred during the outbreak. It should be noted that none of these possible causes have so far been proven, and the cause may be multifactorial with some or all of these factors acting together in a situation where diarrhoea incidence was already high.

2. RESPONSE OF CONCERNED AGENCIES.

2.1 HEALTH

Inter Church Aid (ICA) had a static BHU in place, but the staff were not aware that an outbreak was taking place, until informed by PDH and UNHCR. On the 17th of July, the first day of the reported outbreak, there were no ICA staff at their BHU, because of a fire at their Peshawar office. The usual staff at this BHU comprise husband and wife medical officers, dispenser, LHV, malaria, supervisor and a midwife. ICA have a medical director in Peshawar. As a small agency with few Medical Staff ICA were not in a position to respond sufficiently by deploying enough health staff to the camp.

The following day (18th July) PDH staff (Deputy Director Sanitation and FSMO Peshawar) and UNHCR health staff visited the camp to set up an emergency health team - 1 Medical Officer, 1 dispenser, 2 LHVs, chowkidar, and driver with vehicle, all seconded from Khairabad BHU - and to collect epidemiological data. After a few days ICA sent in their mobile team to take over from their static BHU team at 1400 hours each day. The PDH team stayed from 0800 to about 1900 hours each day. Two ICA staff members (malaria supervisors) were supposed to remain at their BHU to provide overnight medical cover, as these staff lived in the camp. But because of the fear of security problems it was not possible to deploy any other health staff in the BHU's after dark. FSMO organized specimen collection for analysis at Khyber teaching hospital and other laboratories. Most Afghan Refugees made their own way to the BHUs; PDH provided transport to bring in severely ill cases. ICA however did not have this capacity. As well as providing curative measures, BHU staff were instructed to give health education in use of ORS and personal hygiene and sanitation. However neither BHU had any real outreach capability.

PDH Khairabad team were replaced by health staff recruited under emergency health team budget on 26/8/89, almost 6 weeks since reported started of outbreak.

2.2 SANITATION AND PERSONAL HYGIENE

A team from Austrian Relief Committee were already implementing a VIP latrine construction and basic health education programme in sectors near where the outbreak commenced. They accelerated this programme to maximize coverage in the whole northern section of the camp although progress was hampered midway through the epidemic because of severe flooding. Two additional health education teams (2 Lady Health Motivators (LHMs) each) were brought in, to rapidly increase coverage for health education for personal hygiene and sanitation, and ORS distribution and use (5000 extra ORS sachets were provided by UNHCR). Teams referred severely ill cases to the BHUs. Cooperation and coordination between BHUs and sanitation teams, which was initially poor, improved under the direction of FSMO Peshawar.

Early in the epidemic one LHM was posted at the river bank to advise/instruct refugees not to drink river water. She was withdrawn after a few days because refugees were reluctant to heed the advice, often preferring the taste of river water to that provided by tanker.

Chlorinated water with adequate hand-washing facilities and arrangements for hygienic disposal of vomitus and diarrhoea were made available at BHUs. Distribution of reconstituted dried skim milk (DSM) in the camp by mechanical cow by AHSAO was stopped at the request of PDH and UNHCR. Although not proven, this was thought to be a possible source of infection or be a vehicle for transmission of the infection.

2.3 WATER

2.3.1 PIPED WATER SUPPLY FROM TUBE WELL.

A piped water supply scheme based on a private tube well was approved by the Schemes Approval Committee on 25th April 1989 and a contract was signed with the tubewell owner. Water quality of tubewell, as taken and tested by PHED lab on 29/4/1989, was good and fit for drinking purposes. Although it was envisaged that this PHED scheme would start supplying water within two months (i.e. before the end of June) there were long delays in its implementation. The refugees in the affected area were not being supplied water from tube well at the time of outbreak of diarrhoea. It was requested on first interagency meeting on 27th July that all proposed standposts should be installed and made working by PHED as a matter of urgency.

A report by PHED lab made on sample tested from the same tubewell on 29/7/89 suggested that water was not acceptable for drinking as it did not meet WHO chemical quality standards. In the second interagency meeting on 2nd August 1989, PHED was urged to expedite construction of the piped scheme and PHED undertook to complete it entirely within 10 days. By 16th August, piped water was still only being supplied to parts of RV and only half of the total standposts were getting water. PHED gave further assurances that the remainder would get water within two weeks. A water quality test by PHED laboratory from the tube-well owner's house (the tubewell itself was not functioning that day due to power failure) showed that water was bacteriologically fit for drinking. However PHED lab concluded that there was a change in chemical quality of water since April due to excessive pumping of the tubewell which caused saline water intrusion in the aquifer, and further deterioration was predicted.

At the fourth interagency meeting on 30th August, no representative of PHED attended but it was learnt that 13 out of proposed 85 standposts had not yet been connected to the distribution system. It was agreed that testing of water quality should be continued on a monthly basis in order to ensure that water quality remains satisfactory. The possibility of drilling a second deep tubewell should be considered if quality started to deteriorate.

2.3.2 MOBILE WATER TANKER

Drinking water to most of the affected area was being supplied by mobile water tankers from CAR which were getting water from either the private tubewell or another tube well near Nowshera. Although two tankers were permanently assigned to Kheshki, on several occasions it was found that only one tanker (and on few occasions none) was supplying water. A letter written by Head of Sub-office on 28th June did not bring much improvement in the situation. The problem was discussed several times with concerned staff of CAR. In interagency meetings it was recommended that water tanker drivers be instructed to put water in the static tanks and not give water directly to the refugees, and that water in the tanker must be chlorinated. By the third meeting, 4 weeks after reported start of outbreak, it was found that water was being chlorinated but was still not being emptied into the static tanks.

2.3.3 HANDPUMPS.

DACAAR had installed 7 handpumps on boreholes in RV drilled by hand drilling equipment. Inspite of the fact that water from some of the handpumps might have been brackish, they did provide a dependable source of water supply to some parts of RV. Water quality test by PHED lab suggested that water from one handpump was unfit for drinking due to excessive amount of dissolved sulphates and chlorides. Bacteriological quality of water from all seven pumps was satisfactory. Water quality tests were also made by DACAAR in its laboratory using bacteriological test equipment supplied by UNHCR. As it was found that water from two installed hand pumps was brackish, the hand pumps were to be dismantled and checked for any leakage after completion of piped scheme in the area. DACAAR also organised chlorination of water being supplied to the refugees.

2.4 UNHCR.

Immediately upon receiving report of outbreak, health sector staff visited the camp to carry out an informal outbreak investigation and monitor and assist with the setting up of emergency health teams

Within one week an interagency group was convened by UNHCR Health and Water Programme officers to plan strategy, coordinate activities, make recommendations and monitor their implementation. The group had representatives from UNHCR programme and territorial staff, PDH {deputy director (sanitation)}, FSMO Peshawar, Inter Church Aid (medical director), ARC (sanitation programme managers), CAR (water tanker officer), PHED and DACAAR. 4 meetings were held over the course of 5 weeks.

UNHCR released the following supplies on an emergency basis mainly to the PDH team.

	Donated to:-
Ringers lactate IV solution.	PDH team
Dextrose saline IV solution.	" "
Butterfly infusion needles.	" "
ORS sachets	" " & ARC
Co-trimoxazole tabs and Syrup.	" "
Metronidazole tabs.	" "
Promethazine Syrup	" "
Paracetamol Syrup.	" "
Stretchers.	" "
Screens.	" "
Dispensary Tent	PDH.
Millipore water testing kit, media & Portable . incubator.	DACAAR.

UNHCR health and water sector and territorial staff continued to monitor the situation closely throughout the course of the outbreak, and continued to maintain close links with the RVA and DA.

3. PROBLEMS AND RECOMMENDATIONS.

3.1 PROBLEM: SITE OF REFUGEE VILLAGE.

An underlying contributory cause of the outbreak was the poor site of the camp - low lying, subject to flooding, near a contaminated river and with inherent problems of providing abundant clean water. The standing Site Selection Committee which has representatives from UNHCR Water Sector, CAR and PHED was not convened when the Kheshki site was chosen.

RECOMMENDATION:

In future it is recommended that this committee should be convened whenever a new camp is to be set up and no matter the degree of urgency. Assessment of water supply requirements can be made at this time. The interagency monitoring group should also be convened early in the establishment of a new camp in order to plan and coordinate health,sanitation and water facilities.

3.2 PROBLEM: INADEQUATE PROVISION OF HEALTH SERVICES.

Population of the camp expanded rapidly so that existing health facilities became unable to cope even without the outbreak.

RECOMMENDATION:

The PDH via the FSMO should monitor frequently the provision of health care in new arrivals camps; contingency plans should always be drawn up to enable a rapid response without delay whenever the population increases rapidly.

3.3 PROBLEMS: LACK OF SURVEILLANCE.

The outbreak was not picked up by the agency providing basic health cover and the outbreak may have been underway for sometime when the RVA staff reported increasing deaths to UNHCR territorial officers.

RECOMMENDATION:

The agency providing health care has a responsibility to set up and maintain a disease surveillance system and maintain coordination with the RVA to monitor death rates. This is particularly important in a new arrivals camp such as Kheshki where the risk of infectious disease is high.

3.4 PROBLEM: LACK OF FORMAL OUTBREAK INVESTIGATION.

No formal outbreak investigation was conducted and hence the exact cause has not been determined.

RECOMMENDATION:

It is recommended that whenever such an outbreak appears likely an investigatory team is formed as quickly as possible by PDH in collaboration with UNHCR health sector. This team will verify the diagnosis and the occurrence of an epidemic, collect data on the spot to describe the time, place, and person parameters of the outbreak, set up a surveillance system for additional cases and deaths, and analyze the data in order to make a hypothesis on the cause which can then be tested by appropriate intervention and follow-up.

Even where no cause has been found, all activities with the potential to initiate or maintain an outbreak should be carefully scrutinized. Thus the group decided that AHSAO should be requested to stop distribution of liquid milk (reconstituted DSM) since this could not be excluded as a possible cause. Such distribution, particularly where the milk cam be taken home by children in their own containers, is against the latest UNHCR guidelines, which have been endorsed by UNICEF, WHO and WFP. The monitoring group was not aware of this distribution until its 3rd. meeting. If the agency involved had been invited from the beginning, this situation may have been picked up sooner.

3.5 PROBLEM: RECRUITMENT OF EMERGENCY HEALTH TEAM.

The Project Directorate (Health) responded very rapidly by immediately seconding a health team from a BHU in a nearby camp, but recruitment of an emergency health team to replace them (provided for in the PDH budget) took longer because of externally imposed government recruitment constraints.

RECOMMENDATION:

UNHCR and PDH should determine the best form of provision of emergency health teams in order that there are no difficulties with their recruitment.

3.6 PROBLEM: LACK OF EMERGENCY DRUG SUPPLY.

In the Kheshki outbreak PDH had no stocks of drugs or equipment that could be rapidly released for an emergency; these had to be provided by UNHCR.

RECOMMENDATION:

It is recommended that the PDH sets up and maintains a stock of emergency drugs and equipment (possibly initially by a donation from UNHCR). Items nearing expiry could enter the regular system and be replenished from regular purchases.

3.7 PROBLEM: POOR INITIAL COORDINATION.

There was an initial lack of coordination and cooperation between the ICA BHU and PDH BHU and with the sanitation agency (ARC). This improved following the efforts of Peshawar FSMO, and convening of the interagency monitoring group.

RECOMMENDATION:

It is recommended that a health official, usually the local FSMO, be designated as on-site coordinator. He should work closely with Deputy Director Sanitation (or other deputy director as appropriate) and UNHCR health sector who will together provide technical backup. Overall coordination and strategic planning can occur in the monitoring group.

3.8 PROBLEM: POOR ACCESS TO HEALTH FACILITIES.

There were various problems for cases gaining access to health facilities. There was no referral system to BHUs from within the community and limited transport for the seriously ill. There was imbalance in the work load between the BHUs, and some Afghan Refugees may have been refused assistance because of lacking necessary health cards or registration. At the height of the epidemic night cover was inadequate (possibly nonexistent) even though this had been requested and agreed to at the interagency meetings.

RECOMMENDATION:

It is recommended that adequate referral, transportation and right of access for seriously ill patients be set up and guaranteed from early on in the epidemic. Night cover should be provided rapidly when necessary and appropriate procedures and equipment such as lighting should be set up and maintained by PDH. Liaison with DA would be necessary.

3.9 PROBLEM: POOR MANAGEMENT AND TREATMENT PRACTICES.

Management and treatment practices for diarrhoeal disease should be standardized. For example there appeared to be excessive and unnecessary use of antibiotics and antidiarrhoeal preparations by some medical staff.

RECOMMENDATION:

UNHCR should expedite the production of guidelines for control of diarrhoeal disease as well as general guidelines on the response to an outbreak of infections disease. These should be distributed to all health agencies and copies held at all BHUs.

3.10 PROBLEM: LACK OF OUTREACH AND HEALTH EDUCATION PROGRAMMES.

Apart from the mobile EPI team, there is no permanent health outreach programme in this camp. There is also a major need for an intensive programme of health education for personal hygiene and sanitation including the proper use of water. Even when good quality water is delivered to the camp, there is a high risk of contamination by refugees during collection and transit, and storage in their homes.

It is recommended that a PHC community health worker programme be initiated as soon as possible in all new arrivals camps. If there is a network of CHWs in place they can assist with surveillance, promote preventive health measures, carry out health education (eg personal hygiene and sanitation in this outbreak), assist with referrals, and generally act as liaison between health staff and refugees. PDH could request

... should start immediately a new arrivals camp is ... The need will be refugees are then at their most vulnerable.

agency and their capacity to do this should be strengthened (this is in line with future UNHCR policy for sanitation which lays greater emphasis on training and health education).